AMENDMENTS TO THE CLAIMS

1. (Currently Amended) Method for identifying an incoming peak traffic condition in an elevator system, ~~c h a r a c t e r i z e d in that the method comprises~~the method comprising the steps of:

monitoring in real-time peak hour identification of the elevator system the number of car calls and the car load of an elevator taking in passengers in a lobby area;

determining a car load threshold value, on the basis of which an elevator is identified as a peak elevator if the car load exceeds the car load threshold value;

defining a threshold value of car calls, on the basis of which a peak elevator is identified if the number of car calls to floors outside a lobby area exceeds the threshold value of car calls;

collecting statistical data regarding the numbers of passengers arriving to a floor in the elevator system and those leaving the floor during predetermined time windows; and

selecting the prevailing traffic type as an incoming peak traffic condition if at least one peak elevator has been detected and the collected statistical data for the current time window indicates an incoming peak traffic condition.

2. (Currently Amended) Method according to claim 1, ~~c h a r a c t e r i z e d in that the method~~ further ~~comprises~~comprising the step of:

determining the number of simultaneous peak elevators that is required for identification of a real-time peak traffic situation.

3. (Currently Amended) Method according to claim 2, ~~c h a r a c t e r i z e d in that the method further comprises the step of: selecting~~wherein the aforesaid number of simultaneous peak elevators ~~to be~~is two.

4. (Currently Amended) Method according to claim 1, ~~c h a r a c t e r i z e d in that the method~~ further ~~comprises~~comprising the steps of:

determining weighting values for the entrance floors on the basis of the statistical data and in accordance with the number of passengers; and

directing the elevators during an incoming peak traffic situation to the entrance floors according to the weighting values thus determined.

5. (Currently Amended) Method according to claim 1, ~~c h a r a c t e r i z e d in that the method~~ further ~~comprises~~comprising the steps of:

defining the length of the time window to be used in the statistical data;

calculating the numbers of passengers arriving to and leaving the floor within the defined time window in relation to the time of the day;

adding the statistical data regarding the aforesaid numbers of passengers collected for the diurnal cycle under consideration to the existing statistical data, weighted by a predetermined updating coefficient; and

inferring from the said statistical data the most probable traffic type prevailing during each time window.

6. (Currently Amended) Method according to claim 2, ~~characterized in that the method~~ further ~~comprises~~comprising the steps of:

identifying a potential peak traffic situation if the said statistical data indicates a peak traffic situation; and

interpreting the potential peak traffic situation as an actual peak traffic situation if the number of peak elevators detected during the potential peak traffic situation is at least one but less than the aforesaid simultaneous number of peak elevators.

7. (Currently Amended) Method according to claim 2, ~~characterized in that the method~~ further ~~comprises~~comprising the steps of:

calculating the said time interval between departures of elevators from the entrance floor;

forecasting on the basis of the statistical data the numbers of passengers gathering in the elevator queue during the aforesaid time interval;

identifying a potential peak traffic situation when the aforesaid forecast number of passengers exceeds the car load threshold value for peak hour identification; and

inferring the potential peak traffic situation as an actual peak traffic situation if the number of peak elevators detected during the potential peak traffic situation is at least one but less than the aforesaid simultaneous number of peak elevators.

8. (Currently Amended) Method according to claim 6 or 7, ~~characterized in that the method~~ further ~~comprises~~comprising the step of:

requiring at least the said simultaneous number of peak elevators outside a potential peak traffic situation for identification of an actual potential peak traffic situation.

9. (Currently Amended) Method according to claim 7, ~~c h a r a c t e r i z e d in that the method further comprises steps~~ wherein:

weighting coefficients are determined for one or more time windows preceding and following the time window used in the statistical data;

the number of passengers gathering is forecast in the aforesaid manner, in addition to the time window for the moment under consideration, for all the aforesaid time windows by using the weighting coefficients determined;

a potential peak traffic situation is identified if at least one of the said forecast numbers of passengers exceeds the car load threshold value for peak hour identification; and

the potential peak traffic situation is inferred as an actual peak traffic situation if at least one but fewer than the aforesaid simultaneous number of peak elevators are detected during the potential peak traffic situation.

10. (Currently Amended) A computer readable medium having stored thereon a computer~~Computer~~ program product for identification of an incoming peak traffic situation in an elevator system, the computer program product causing a processor ~~c h a r a c t e r i z e d in that the computer program product comprises a program code arranged~~ to execute the steps of:

monitoring in real-time peak hour identification of the elevator system the number of car calls and the car load of an elevator taking in passengers in a lobby area;

determining a car load threshold value, on the basis of which the elevator is identified as a peak elevator if the car load exceeds the car load threshold value;

defining a threshold value of car calls, on the basis of which a peak elevator is identified if the number of car calls to floors outside the lobby area exceeds the threshold value of car calls;

collecting statistical data regarding the numbers of passengers arriving to a floor in the elevator system and those leaving the floor during predetermined time windows; and

selecting the prevailing traffic type as an incoming peak traffic condition if at least one peak elevator has been detected and the collected statistical data for the current time window indicates an incoming peak traffic condition.

11. (Currently Amended) The computer readable medium~~Computer program product~~ according to claim 10, ~~characterized in that the program code has been~~ further ~~arranged~~causing a processor to execute the step of:

determining the number of simultaneous peak elevators that is required for the identification of a real-time peak traffic situation.

12. (Currently Amended) The computer readable medium~~Computer program product~~ according to claim 11, ~~characterized in that the program code has been~~ further ~~arranged~~causing a processor to execute the step of:

selecting the aforesaid number of simultaneous peak elevators to be two.

13. (Currently Amended) The computer readable medium~~Computer program product~~ according to claim 10, ~~characterized in that the program code has been~~ further ~~arranged~~causing a processor to execute the steps of:

determining weighting values for the entrance floors on the basis of the statistical data and in accordance with the number of passengers; and

directing the elevators during an incoming peak traffic situation to the entrance floors according to the weighting values thus determined.

14. (Currently Amended) The computer readable medium~~Computer program product~~ according to claim 10, ~~characterized in that the program code has been~~ further ~~arranged~~causing a processor to execute the steps of:

defining the length of the time window to be used in the statistical data;

calculating the numbers of passengers arriving to and leaving the floor within the defined time window in relation to the time of the day;

adding the statistical data regarding the aforesaid numbers of passengers collected for the diurnal cycle under consideration to the existing statistical data, weighted by a predetermined updating coefficient; and

inferring from the said statistical data the most probable traffic type prevailing during each time window.

15. (Currently Amended) The computer readable medium~~Computer program product~~ according to claim 11, ~~characterized in that the program code has been~~ further ~~arranged~~causing a processor to execute the steps of:

identifying a potential peak traffic situation if the said statistical data indicates a peak traffic situation; and

interpreting the potential peak traffic situation as an actual peak traffic situation if the number of peak elevators detected during the potential peak traffic situation is at least one but less than the aforesaid simultaneous number of peak elevators.

16. (Currently Amended) The computer readable medium~~Computer program product~~ according to claim 11, ~~characterized in that the program code has been~~ further ~~arranged~~causing a processor to execute the steps of:

calculating the said time interval between departures of elevators from the entrance floor;

forecasting on the basis of the statistical data the numbers of passengers gathering in the elevator queue during the aforesaid time interval;

identifying a potential peak traffic situation when the aforesaid forecast number of passengers exceeds the car load threshold value for peak hour identification; and

inferring the potential peak traffic situation as an actual peak traffic situation if the number of peak elevators detected during the potential peak traffic situation is at least one but less than the aforesaid simultaneous number of peak elevators.

17. (Currently Amended) The computer readable mediumComputer program product according to claim 15, ~~characterized in that the program code has been~~ further ~~arranged~~causing a processor to execute the step of:

requiring at least the said simultaneous number of peak elevators outside a potential peak traffic situation for identification of an actual potential peak traffic situation.

18. (Currently Amended) The computer readable mediumComputer program product according to claim 16, ~~characterized in that the program code has been further arranged to execute steps~~ wherein:

weighting coefficients are determined for one or more time windows preceding and following the time window used in the statistical data;

the number of passengers gathering is forecast in the aforesaid manner, in addition to the time window for the moment under consideration, for all the aforesaid time windows by using the weighting coefficients determined;

a potential peak traffic situation is identified if at least one of the said forecast numbers of passengers exceeds the car load threshold value for peak hour identification; and

the potential peak traffic situation is inferred as an actual peak traffic situation if at least one but fewer than the aforesaid simultaneous number of peak elevators are detected during the potential peak traffic situation.

19. (Currently Amended) System for identifying an incoming peak traffic situation in an elevator system, said system comprising:

at least one elevator ~~(20, 23)~~;

a car load weighing device ~~(21, 24)~~ for calculating the car load of elevator passengers for the identification of a peak elevator;

an elevator door light cell ~~(22, 25)~~ for counting the number of passengers entering the elevator and the number of passengers leaving the elevator;

a control logic ~~(26)~~ for recognizing car calls for identification of a peak elevator, for management of traffic flow and control of the elevator system; and

~~characterized in that:~~

~~the system further comprises~~ a database ~~(27)~~ for the collection of statistical data, said statistical data comprising the numbers of passengers arriving to and leaving the floor during predetermined time windows~~; and that,~~

wherein ~~the~~ said control logic ~~(26)~~ has been arranged to interpret the prevailing traffic type as an incoming peak traffic condition if at least one peak elevator has been detected and the statistical data collected indicates an incoming peak traffic condition.

20. (Currently Amended) System according to claim 19, ~~c h a r a c t e r i z e d in that the system further comprises:second determining means (26) for~~ wherein said control logic is further configured to determine~~determining~~ the number of simultaneous peak elevators~~, which number is~~ required for identification of a real-time peak traffic situation.

21. (Currently Amended) System according to claim 20, ~~c h a r a c t e r i z e d in that the system further comprises: a selector (26) for selecting the~~wherein said number of simultaneous peak elevators ~~to be~~is two.

22. (Currently Amended) System according to claim 19, ~~c h a r a c t e r i z e d in that the system further comprises~~wherein said control logic is further configured to:

~~first determining means (26) for determining~~determine weighting values for the entrance floors on the basis of the statistical data according to the number of users; and

~~control means (26) for directing~~direct the elevators to the entrance floors during an incoming peak traffic situation in accordance with the weighting values determined.

23. (Currently Amended) System according to claim 19, ~~c h a r a c t e r i z e d in that the system further comprises~~wherein said control logic is further configured to:

~~third determining means (26) for determining~~determine the length of the time window used in the statistical data;

~~calculating means (26) for calculating~~calculate the numbers of passengers arriving to and leaving the floor within a defined time window in relation to the time of the day;

~~summing means (26) for adding~~add the said statistical data collected for the diurnal cycle under consideration and comprising the numbers of passengers to the existing statistical data ~~(27)~~, weighted with a predetermined update coefficient; and

~~first deducing means (26) for deducing~~deduce the most probable traffic type prevailing during each time window on the basis of said statistical data.

24. (Currently Amended) System according to claim 20, ~~c h a r a c t e r i z e d in that the system further comprises~~wherein said control logic is further configured to:

~~first identifying means (26) for identifying~~identify a potential peak traffic situation if the aforesaid statistical data indicates a peak traffic situation; and

~~second deducing means (26) for interpreting~~interpret a potential peak traffic situation as an actual peak traffic condition if the number of peak elevators detected during the potential peak traffic situation is at least one but less than the aforesaid simultaneous number of peak elevators.

25. (Currently Amended) System according to claim 20, ~~c h a r a c t e r i z e d in that the system further comprises~~wherein said control logic is further configured to:

~~time interval determining means (26) for calculating~~calculate the average time interval between departures of elevators from the entrance floor;

~~estimating means (26) for forecasting~~forecast the number of passengers gathering in an elevator queue on the basis of statistical data during the aforesaid time interval;

~~first identifying means (26) for identifying~~identify a potential peak traffic situation when the aforesaid forecast number of passengers exceeds the car load threshold value for peak hour identification; and

~~second deducing means (26) for inferring~~infer a potential peak traffic situation as an actual peak traffic situation if the number of peak elevators detected during the potential peak traffic situation is at least one but less than the aforesaid simultaneous number of peak elevators.

26. (Currently Amended) System according to claim 24, ~~c h a r a c t e r i z e d in that the said second deducing means (26) have been arranged~~wherein said control logic is configured to require at least the aforesaid number of peak elevators outside a potential peak traffic situation for identification of an actual peak traffic situation.

27. (Currently Amended) System according to claim 25, ~~c h a r a c t e r i z e d in that the system further comprises~~wherein said control logic is further configured to:

~~fourth determining means (26) for determining~~determine weighting coefficients for one or more time windows preceding and following the time window used in the statistical data;

~~estimating means (26) for forecasting~~forecast in the aforesaid manner the number of passengers accumulated in addition to the time window for the moment under consideration for all the aforesaid time windows by using the weighting coefficients determined;

~~second identifying means (26) for identifying~~identify a potential peak traffic situation if at least one of the aforesaid forecast numbers of passengers exceeds the car load threshold value for peak hour identification; and

~~second deducing means (26) for inferring~~infer a potential peak traffic situation as an actual peak traffic situation if the number of peak elevators detected during the potential peak traffic situation is at least one but less than the aforesaid simultaneous number of peak elevators.